The Examiner rejected Claims 1 to 4, 6 and 10 under 35 U.S.C. §102(e) as being anticipated by the teaching of ***Jorgensen et al.*** (US 6,113,862). The Examiner inter alia pointed out that the reactor assembly which is addressed in the reference showed all of the features of applicants' reactor, and argued that the requirements pertaining to the optional gas distributor plate of, and its arrangement in, applicants' reactor were met by the secondary fluidization grid of ***Jorgensen et al.***'s assembly.

Applicants respectfully disagree. According to the teaching of ***Jorgensen et al.*** it is mandatory that the reactor comprise, in the direction of gas flow,

(a) a primary distribution plate or fluidization grid designated as (2) in Figure 1 of the reference,

(b) a secondary reaction zone designated as (2a) in Figure 1 of the reference,

(c) the secondary fluidization grid which is designated as (3) in Figure 1 of the reference, and

(d) a primary reaction zone designated as (3a) in Figure 1 of the reference.[3)]

The secondary fluidization grid of ***Jorgensen et al.***'s assembly is, accordingly, located between two reaction zones, ie. a zone where the reaction gas is transitioned from one reaction zone into another. In contrast thereto, applicants' claims require that the optional gas distributor plate be located in a region *"for transitioning the reaction gas from the circulation gas line into the reactor chamber."* The secondary fluidization grid of ***Jorgensen et al.***'s assembly and applicants' optional gas distributor plate are therefore clearly arranged in different locations of the reactor.

The test for anticipation is one of identity which means that the identical invention must be shown in the reference in as complete detail as is contained in the claim.[4)] In fact, the Federal Circuit has stated that it is error to treat claims as a catalog of separate parts, in disregard of the part-to-part relationships set forth in the claims that give those claims their meaning.[5)]

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3) Cf. Figure 1 in conjunction with col. 7, indicated line 58 et seq., of ***US 6,113,862***.

4) Cf. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989).

5) Cf. *Lindemann Maschinenfabrik v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984).

Applicants' claims require that the optional gas distributor plate be located in the region of transition whereas the secondary fluidization grid (3) of ***Jorgensen et al.*** is located between two reaction zones. Also, any additional secondary grid which may be present in ***Jorgensen et al.***'s assembly *"would follow such spacing requirements in relation to the fluidization grid below it"*[6] as they apply to the distance between the primary grid (2) and the secondary grid of ***Jorgensen et al.***'s assembly.[7] Any such additional grids would, therefore, logically be located above, or further downstream of, the secondary fluidization grid (3). To say that the secondary fluidization grid (3) of the reference, or any one of the further secondary grids which may be present in the prior art reactor, corresponds to the optional gas distributor plate referenced in applicants' claims clearly disregards the part-to-part relationships which are set forth in applicants' claims and which give those claims their meaning. The Examiner's position that applicants' reactor is anticipated by the teaching of ***Jorgensen et al.*** is therefore clearly in error. It is therefore respectfully requested that the rejection be withdrawn. Favorable action is solicited.

For completeness sake, the following is respectfully added. The above enumeration of elements of the prior art reactor assembly follows the direction of gas flow. This means that only the primary distribution plate or fluidization grid (2) of ***Jorgensen et al.***'s assembly which provides initial mixing and fuidization of the granular polymer product[8] is located in a region in which the reaction gas is transitioned from the circulation gas line into the reactor chamber and which, accordingly, corresponds to the region of transition which is specified in applicants' claims.

The primary fluidization grid (2) is located underneath the secondary reaction zone (2a) into which larger size particles of the polymerizate are segregated for product discharge,[9] and is primarily responsible to ensure the initial mixing and fuidization of the granular polymer product.[10] It is deemed to be self-evident that the fluidization of primarily large(r) particles requires higher gas ve-

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6) Cf. col. 5, indicated lines 33 to 35, of ***US 6,113,862***.

7) Cf. col. 5, indicated line 22 et seq., of ***US 6,113,836***.

8) Cf. e.g. col. 1, indicated lines 38 to 41, of ***US 6,113,862***.

9) Cf. e.g. col. 2, indicated lines 31 to 39, col. 4, indicated line 66, to col. 5, indicated line 3, and col. 7, indicated lines 17 to 25, of ***US 6,113,862***.

10) Cf. e.g. col. 1, indicated lines 38 to 41, of ***US 6,113,862***.

locities than the fluidization of small(er) particles.[11] It is also evident that the widening of the system from the make-up or gas circulation line designated as (8) in Figure 1 of ***Jorgensen et al.*** into the reactor space will significantly reduce the gas velocity. The primary fluidization grid (2) counteracts this loss of gas velocity by obstructing *at least* 75% of the area which is available for flow.[12]

In contrast thereto, applicants' reactor comprises either no gas distributor plate in the region of transition, or it comprises only a gas distributor plate which obstructs *less than* 50% of the area. The particular construction of applicants' optional gas distributor plate therefore clearly further distinguishes applicants' reactor from the assembly of ***Jorgensen et al.***

The conditions which prevail at the location of the secondary fluidization grid (3) of ***Jorgensen et al.***'s assembly differ in several pertinent factors. On the one hand, the secondary grid is in between two reactor zones, that is in a position where the gas velocity is not decreased due to a change in the diameter of the reactor. As such, an obstruction of the flow to counteract velocity loss as it is encountered in the region of transition is unnecessary at the location of the secondary fluidization grid (3). On the other hand, ***Jorgensen et al.***'s procedure requires that the secondary fluidization grid (3) allow particles of larger size to segregate into the lower section of the reactor zone.[13] Accordingly, the gas velocities prevailing above the secondary fluidization grid (3) need to be sufficiently lower than at the location of the primary fluidization grid (2) to allow that the larger particles pass downwards, against the gas flow, into the secondary reaction zone (2a). The secondary fluidization grid (3) of ***Jorgensen et al.***'s assembly is, therefore, only required to obstruct up to 75% and preferably up to 50% of the area for flow.[14]

The foregoing shows that, although both the primary grid (2) and the secondary grid (3) of ***Jorgensen et al.*** are *"fluidization"* grids, the different conditions which are encountered in their requisite locations, as well as their different purposes, necessitate that the

11) Cf. e.g. ***Jorgensen et al.***'s remarks in col. 4, indicated lines 12 to 16, of ***US 6,113,862.***

12) Cf. col. 4, indicated lines 20 to 23, of ***US 6,113,862.***

13) Cf. e.g. col. 4, indicated lines 27 to 30, of ***US 6,113,862.***

14) Cf. e.g. col. 4, indicated lines 24 to 27, of ***US 6,113,862.***

respective grids meet distinctly different requirements in order to function:

- The primary fluidization grid (2) has to ensure initial mixing and fuidization of the larger size granular polymer product in a location where the gas velocity is reduced due to the widening of the system from the make-up or gas circulation line into the reactor space; and
- The secondary fluidization grid (3) has to allow the larger size polymer particles to pass downward against the gas flow, and it is located within the reactor space so that a velocity reduction due to the width of the system as is encountered in the region of transition are not prevalent.

In light of the significant differences in the prevailing conditions and the purposes served by the primary grid (2) and the secondary grid (3), a person of ordinary skill in the art would not be motivated to employ the design of ***Jorgensen et al.***'s secondary fluidization grid (3) for the use as the primary fluidization grid (2) which is located in the region of transition. The design of the secondary grid (3) is such that it allows large polymer particles to pass downward against the gas flow, and the design is therefore clearly unsuited to ensure initial mixing and fuidization of the larger size granular polymer product. Accordingly the reference would not have motivated a person of ordinary skill in the art to omit the primary fluidization grid (2) of ***Jorgensen et al.***'s assembly, or to modify the design of the primary fluidization grid (2) based on the information of ***Jorgensen et al.*** regarding the secondary grid (3). The teaching of ***Jorgensen et al.*** is therefore not suited to render applicants' reactor prima facie obvious within the meaning of Section 103(a).

The foregoing applies, mutatis mutandis, also where applicants' new Claims 16 to 22 are concerned which include the pertinent provisions recited in Claim 1. Furthermore, applicants' reactor according to Claims 16 to 22 consists essentially of a region of transition in the lower section of the reactor tube, followed by a reaction zone which is followed by a calming zone. The subject matter of the additional claims is therefore also neither anticipated by, nor rendered obvious by, the teaching of ***Jorgensen et al.***

The Examiner rejected Claims 7 and 8 under 35 U.S.C. §103(a) as being unpatentable in light of the teaching of ***Jorgensen et al.*** (ibid.) when taken in view of the disclosure of ***Lubbock*** (US 2,636,712).

Claims 7 and 8 depend upon Claim 1 and further provide for a closable flap situated in the region of transition from the circulation gas line into the lower section of the reactor chamber which flap is adapted to prevent the penetration of polymer particles into the circulation gas line when the compressor is switched off, and the teaching of ***Lubbock*** is applied by the Examiner as showing a slide valve with orifices which is used to control the flow of solids.

However, as pointed out in the foregoing, applicants' reactor as defined in Claim 1 and further specified in the dependent claims is distinguished from the reactor arrangement addressed in the teaching of ***Jorgensen et al.*** in that applicants' reactor has, in the region of transition, either no gas distributor plate or has a gas distributor plate having orifices which occupy more than 50% of the total surface area of the gas distributor plate, whereas the reactor of ***Jorgensen et al.*** comprises the mandatory primary distribution plate (2) which obstructs at least about 75%, and preferably at least about 90%, of the flow area. It has also been explained in the foregoing why the teaching of ***Jorgensen et al.*** fails to motivate a person of ordinary skill in the art to make the modification which is necessary to arrive at applicants' reactor arrangement. The disclosure of ***Lubbock*** fails to close or even narrow the gap between the provisions which are incorporated into Claims 7 and 8 by reference to Claim 1.

In light thereof, the teaching of ***Jorgensen et al.*** when taken in view of the disclosure of ***Lubbock*** is not deemed to be sufficient to establish that the subject matter of applicants' Claims 7 and 8, or of any other of applicants' claims, was rendered prima facie obvious under Section 103(a) at the time applicants made their invention. It is therefore respectfully requested that the respective rejection be withdrawn. Favorable action is solicited.

The Examiner reiterated the requirement to restrict the claims which are pending in the application to elected Claims 1 to 4, 6 to 8 and 10, arguing that the prior art rejections raised in the Office action supported that unity of invention was lacking. However, in light of the foregoing and the attached, the Examiner's respective argument is no longer valid. The particular combination of technical features which characterizes applicants' reactor arrangement is neither anticipated nor rendered obvious by the prior art applied by the Examiner, and the technical features which characterize applicants' reactor arrangement therefore qualify as the special technical fea-

tures which define the contribution which applicants' invention makes over the prior art. The respective special technical features are incorporated into Claims 11 to 15 by reference to Claim 1, so that the subject matter of Claims 11 to 15 and the subject matter of Claims 1 to 4, 6 to 8 and 10 is in a technical relationship which involves one or more of the same or corresponding special technical features as required for unity of invention under the circumstances addressed in PCT Rule 13.2. It is therefore respectfully urged that the requirement to restrict the application be withdrawn and that Claims 11 to 15 be grouped together with Claims 1 to 4, 6 to 8 and 10. Favorable action is solicited.

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Respectfully submitted,
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Encl.: CLAIM AMENDMENTS (Appendix I)

JR/BAS